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IMAGE QUALITY METER**MODEL HQM-1**

The following are tentative specifications for the Image Quality Meter subject to revision as evaluation and calibration work continues.

I. PHYSICAL SPECIFICATIONS

Size 69" long x 50" deep x 58" high, weight approximately 1200 lbs.

Power input 105 to 125 volts 60 cps @ 15 amperes.

II. MEASUREMENT SPECIFICATIONS**A. Density Display**

Range = 0 to 3.0 Density units

Display accuracy = $\pm 5\%$ density and distance

Instrument accuracy = $\pm 7\%$

Magnifications Available:

Distance 1 X = 475 micron/cm to in 7 steps to

100 X = 4.75 micron/cm.

Density units 1 X 0-3. in 7 steps to 100 X

B. Resolution Meter

Range = 150 L/mm to 20 L/mm, and 100 L/mm to 10 L/mm

Meter readability accuracy $\pm 3\%$

Computer accuracy $\pm 3\%$

Instrument accuracy $\pm 6\%$

(For suitable high contrast test target as defined by

$$\Delta D = 20 G$$

where ΔD = Density difference between high and low density areas of target.

and G = Granularity coefficient in microns.

- C. Granularity coefficient meter reads Selwyn Granularity coefficient with scanning spot fixed at 5 micron diameter. Range - unknown at this time - however - machine will distinguish between all films lying between [REDACTED] Micro Film and [REDACTED]**
- Meter readability accuracy $\pm 3\%$
- Computer accuracy $\pm 5\%$
- Overall instrument accuracy $\pm 8\%$

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D. Acutance (Sharpness) Meter.

Reads Acutance as defined by Higgins and Perrin in, "The Evaluation of Optical Images", Photographic Science and Engineering, Vol. 2 No. 2, August, 1958, Equation No. 6.

Range 1,000 to 40,000

Meter readability accuracy $\pm 3\%$

Computer accuracy $\pm 5\%$

Overall instrument accuracy $\pm 8\%$

(No calibrated samples are available to accurately establish range or accuracy for acutance or granularity)

III. GENERAL

Scan length .1875 inches.

Acutance and resolution spot size 5 x 50 microns.

Granularity spot size 5 micron diameter.

Scan frequency 4 per second (2 forward and 2 reverse).

A control is provided for operator to position a computing aperture anywhere in the Scan and thus ignore other portions of the signal.

A control is provided to allow operator to filter out large portions of the grain noise while making the resolution reading.

A control is provided to vary the computing threshold for resolution to raise the computer sensitivity above the grain noise.

Viewing optics are provided for positioning the film under the scanning head.

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